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RESECTION OF THE OPTIC NERVE.

BY L. WEBSTER FOX, M. D.

(SECOND PAPER.)

Shortly after my first paper made its appearance on the above subject, I again had the opportunity of putting to a test the efficacy of this operation. The immediate disappearing of all sympathetic symptoms, the freedom from pain, the rapid recovery, the saving of an eyeball, make me give the details of the following interesting case.

Mrs. Kate Guest, age 25, of Palmyra, N. J., at the age of three years, had her *left eye* punctured by a fork. The tine entering at the lower and inner quadrant, close to the corneo-scleral margin in the ciliary bodies. This accident was immediately followed by an attack of sympathetic ophthalmia, in which the sympathizing eye—the right—became totally blind, the left passing through the attack none the worse; the vis-



ion remaining good until November of 1886, when the right eye became irritated and inflamed causing the left one to become the seat of sympathetic iritis. It is interesting to note that the eye which was originally the seat of injury now became the attacked eye, seventeen years after the primal wound; in other words, the right was now the starting point of the migratory ophthalmia and the fulmination taking place in the apparently healthy one. At this stage the patient came under my care at the German-town Hospital. The diagnosis was simple, although the left eye did not present any untoward symptoms. The patient complained of a "mist before her eye." An examination revealed iritis, the iris having become attached to the anterior capsule of the lens; having *seclusio pupillae*.

The patient had very little or no pain during the fading away of the vision. It was a case of "slow iritis," where the vision was blurred and the patient did not realize her danger until too late.

I immediately performed an iridectomy on the nasal side of the left eye; first to prevent further progress of the iritis, and

second, to give a better pupil for vision. The internal treatment was hydrarg, bi-chlor. and potassa iodidi, pushed to their fullest limit. The eye rapidly grew better and useful vision was obtained. ($\frac{2}{3}$ J. $\frac{3}{4}$ ") glasses did not improve sight, owing to a slight deposit of iritic pigment on the anterior capsule of the lens. The patient was married in 1887, and during her pregnancy, which followed shortly afterwards, she had a mild attack of dimness of sight, but attributed it to her physical condition.

In the latter part of 1889, the third attack came on, which materially lessened her definition of objects for distance. Having removed from the city, shortly after her marriage, she did not seek the professional advice of a medical man during the attacks, but depended solely upon such domestic remedies as hot water, tea leaves, etc., etc.

In February of this year she had a fourth attack, which caused vision to fall very rapidly to $\frac{5}{6}$, which so alarmed the patient that she sought my professional advice immediately. The attacks all seemed to start from the right eye, blind one, which was sensitive to pressure, with at all times some

lachrymation, the tears being scalding and coming on in floods, at intervals; these symptoms always being the precursor of hazy vision in the left eye. At this examination I found in the right eye, which was partially atrophied, pain on slight pressure, but not at all angry looking. The left had a diffused Descemitis; iris musty and scarcely any reflex to be obtained through the artificial pupil which I made in 1886. Vision was very defective, fingers could be counted at about five feet against a black back-ground.

In 1886 I suggested the removal of the right eyeball, but owing to the young woman having hopes of a speedy marriage such advice was not entertained. The operation of resection of the optic nerve was suggested and when it was explained that the eyeball could be preserved, while the source of the migratory ophthalmia cut off, her consent to a resection was given and the operation was performed, under ether, March 15th, 1891. Vision began to clear on the second day following, and so continued from day to day until May 6th (last examination), when vision had returned to

$\frac{20}{200}$. Very little or no discomfort followed the resection, in fact the patient returned home in ten days. At present the scar visible in the operated eye is nothing more than one would find after an advancement or tenotomy of a muscle.

I have recently been making experiments upon rabbits to decide whether the nerve should be severed immediately at its bulbar attachment or further down the trunk. My experiments prove that it is safer to cut the nerve as close to the eyeball as possible; by so doing one lessens the chances of a reunion. In the rabbit the optic nerve enters



the eyeball at a right angle to its basilar end, which lies under the anterior lobe of

the brain. As soon as the nerve is severed the ocular muscles turn the eyeball on its equatorial axis, and in consequence the nerve becomes displaced down and in, in some cases one-fourth of an inch.

The above figure represents a post-mortem drawing of an eyeball of a rabbit five weeks after a resection operation. 1, represents the optic nerve entrance turned out from its original position; 2, the optic nerve-end down and in, which was attached to the eyeball by organized tissue. The relative position of optic nerve entrance and nerve-end has been accurately preserved. The illustration is life-size. The fundus oculi was examined with the ophthalmoscope immediately after the resection. The arteries were found empty, while the veins retained sufficient blood to show their outlines very distinctly and so remained until the death of the rabbit five weeks later. In the rabbit the distribution of the blood-vessels is unlike that in the eye-ground of the human subject, while opaque nerve fibres extend beyond the equator in a narrow ribbon-shaped band, exceedingly bright and silvery, across the horizon. The eyeball did

not change in appearance, the cornea remaining bright and clear; no change in the color of the iris nor crystalline lens. I am convinced that where the operation for resection of the optic nerve is carefully carried out, we have a better substitute than enucleation, and with proper instruments it becomes a very simple procedure.

I can only repeat what Dr. de Wecker has said, "that the only way to prove conclusively that resection of the optic nerve can take the place of enucleation is that a large number of resections shall be made and the results noted."

The above case, which I have described carefully and somewhat at length, is one in which I feel sure a resection of the optic nerve is as safe a prophylactic measure as enucleation, and in addition I have saved a particularly morbid woman from the disagreeable necessity of wearing an artificial eye.

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